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**PCT**

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**Transmission of the report  
of preliminary International  
Exam**

**91 940 Les Ulis  
France**

**Date of sending  
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**Reference of application of applicant  
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**Communication Important**

**Application international Nr.  
PCT/FR00/00757**

**Date of International  
Day/month/year  
23/03/2000**

**Date of priority  
Day/month/year  
26/03/1999**

**Applicant  
MALINA, Halina**

**Name and post address of administration  
Which made exam preliminarere international  
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31 Rec'd PCT/FR 20 SEP 2001

# PATENT COOPERATION TREATY

## PCT

### REPORT OF PRELIMINARY INTERNATIONAL EXAM

( article 36 and rule 70 of PCT

Application international Nr.  
PCT/FR00/00757

Date of International  
Day/month/year  
23/03/2000

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Applicant  
MALINA, Halina

1. The present report of preliminary international exam, was established by administration charged to made preliminary international exam, is transmited for applicant according to article 36
2. This report contains 5 sheets, with this one.

X It is associated with annexes, thus mean sheets of description, claims or dessins which were modified and which are used as the basis for the present report or the sheets containing a corrections done by the administrations charged of the preliminary international exam (see rulke 70.16 and instruction 607 of the Instructions administrative of PCT).  
The annex contains 7 sheets

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**I. Basis of the report**

1. Concerning element of the international report (the sheet of replacement were given to the receiving office in the response for an invitation made according to the article 14 are considered in the present rapport as "initially submitted" and they are not joint to the annex of the report because they do not contain a modification ( rule 70.16 and 70. 17)):

## Description, pages

- |       |                            |
|-------|----------------------------|
| 3,4   | obtain by fax 9/04/2001    |
| 2,5,6 | obtained by Fax 15/06/2001 |
| 1     | obtained by Fax 21/06/2001 |

## Claims, NR

1-6 obtain by fax 21/06/2001

**V. Declaration documented concerning the novelty, the innovative activity  
and the possibility of the industrial application**

1. Declaration

Novelty	Yes: Claims 1-6
Innovation	Yes: Claims 1-6
Possibility of an application in industry	Yes: Claims 1-6

2. References and explanation

**see separate page**

## Report of the preliminary international exam - separated sheet

### Concerning the point V.

Declaration documented according to the Article 35 (2) concerning the novelty, the innovation and the possibility of an application in industry

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The reference was made to the following documents:

**D1:** Kotake Y. et al., J Biochem. 1975, 77, 685-687, mentioned in the application on page 1, line 7

**D2:** Kobayashi K et al., Chem. Pharm. Bull. 1980,28, 2960-2966, cited in the application on page 1, line 8

\*\*\*\*\*

1. The document **D1** shows (the reference in parenthesis concerning this document) a compound (**the complex** xanthurenic acid -insulin (title)), which is produced by a reaction of xanthurenic acid with insulin (insulin is a human protein) in a solution of buffer or serum (page 685, column 1, line 20- column 2, line 2. The document **D1** shows also that this compounds has a immunological property (summary).

2. The document **D2** describes (the references between parenthesis concern these documents) a compound which is produced by the reaction of xanthurenic acid with BSA (page 2962, line 37-38). The document **D2** shows that serum bovine albumine (BSA, which is a protein of mammals) is bound to xanthurenic acid ( page 2965, line 39) by electrostatic (page 2965, line 6) or hydrophobic (page 2965, line 7) interaction.

3. The objective of the claim 1 is **different** from these known combinations by this that the bond between xanthurenic acid and the protein is covalent.

4. The objective of the claim 1 is then **new** (Article 33(2)PCT).

5. The **purpose** which this invention proposes to solve can be then consider to be to found the alternative combinations having immunological properties.

## **Report of the preliminary international exam - separated sheet**

6. The solution of this problem proposed in the claim 1 of this application is considered to have an inventive activity (Article 33(3) PCT), for the following reason:

Xanthurenic acid is linked covalently to a protein is a combination which could not be deducted from the documents attainable from the precedent art (which described only a complex (see § 1 above) or an interaction electrostatic or hydrophobic interaction (see § 2 above))

7. The claims 2-6 depend on the claim 1 and then satisfied also, as such, the conditions required by the PCT concerning the novelty and innovative activity.

### 8. Industrial application (Article 33 (4) PCT):

The objective of the claims 1 to 6 targets an application of an induction of immune response against the pathology causes by the modification of the cellular physiology due to xanthurenic acid (page 1, line 3-5 and 6, line 10-16).